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Regulatory  
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## Notice of Intended Regulatory Action (NOIRA) Agency Background Document

<b>Approving authority name</b>	State Air Pollution Control Board
<b>Primary action</b>	9 VAC 5-140
<b>Secondary action(s)</b>	None
<b>Regulation title</b>	Regulation for Emissions Trading
<b>Action title</b>	Clean Air Interstate Rule (Revision E05)
<b>Document preparation date</b>	June 21, 2005

This information is required for executive review ([www.townhall.state.va.us/dpbpages/apaintro.htm#execreview](http://www.townhall.state.va.us/dpbpages/apaintro.htm#execreview)) and the Virginia Registrar of Regulations ([legis.state.va.us/codecomm/register/regindex.htm](http://legis.state.va.us/codecomm/register/regindex.htm)), pursuant to the Virginia Administrative Process Act ([www.townhall.state.va.us/dpbpages/dpb\\_apa.htm](http://www.townhall.state.va.us/dpbpages/dpb_apa.htm)), Executive Orders 21 (2002) and 58 (1999) ([www.governor.state.va.us/Press\\_Policy/Executive\\_Orders/EOHome.html](http://www.governor.state.va.us/Press_Policy/Executive_Orders/EOHome.html)), and the *Virginia Register Form, Style, and Procedure Manual* ([http://legis.state.va.us/codecomm/register/download/styl8\\_95.rtf](http://legis.state.va.us/codecomm/register/download/styl8_95.rtf)).

### Purpose

*Please describe the subject matter and intent of the planned regulatory action.*

The purpose of the proposed action is to reduce SO<sub>2</sub> and NO<sub>x</sub> emissions (which are important precursors of PM<sub>10</sub> and ozone) in order to eliminate their significant contribution to nonattainment or interference with maintenance of the National Ambient Air Quality Standards in downwind states, and to protect Virginia's air quality and its natural resources.

### Statutory Authority

*Please identify the section number and provide a brief statement relating the content of the statutory authority to the specific proposed regulation.*

Section 10.1-1308 of the Virginia Air Pollution Control Law (Title 10.1, Chapter 13 of the Code of Virginia) authorizes the State Air Pollution Control Board to promulgate regulations abating, controlling and prohibiting air pollution in order to protect public health and welfare. Section 10.1-1322.3 indicates that the Board may promulgate regulations to provide an emissions trading and banking program that results in net air emission reductions, creates an economic incentive for reducing air emissions, and allows for economic growth. However, no regulation shall prohibit the direct trading of credits or allowances between private industries provided such trades do not have an adverse impact on air quality in Virginia.

## Need

*Please provide a brief explanation of the need for and the goals of the new or amended regulation. In addition, detail the specific reasons why the agency has determined that the proposed regulatory action is essential to protect the health, safety, or welfare of citizens. Finally, delineate any potential issues that may need to be addressed as the regulation is developed.*

The ozone present at ground level as a principal component of photochemical smog is formed in sunlit conditions through atmospheric reactions of two main classes of precursor compound: VOCs and NO<sub>x</sub> (mainly NO and NO<sub>2</sub>). The term "VOC" includes many classes of compounds that possess a wide range of chemical properties and atmospheric lifetimes, which helps determine their relative importance in forming ozone. Sources of VOCs include man-made sources such as motor vehicles, chemical plants, refineries, and many consumer products, but also natural emissions from vegetation. Nitrogen oxides are emitted by motor vehicles, power plants, and other combustion sources, with lesser amounts from natural processes including lightning and soils.

In addition to ensuring that areas of the state that meet the national standards continue to do so, the Commonwealth is also obligated to actively improve air quality. Currently, approximately one half of the Commonwealth's citizens live in areas that do not attain the national standards. Virginia's nonattainment problems extend beyond its borders as well: a neighboring state has submitted a § 126 petition to EPA claiming that Virginia's air pollution is having a negative impact on its air quality. Visibility problems have been identified in Virginia's national park areas. Additionally, nitrogen deposition from airborne emissions is contributing to serious water quality problems in Chesapeake Bay. In this larger context, it is clear that the state needs to take additional steps beyond the immediate legal requirements for nonattainment and other areas if larger, statewide issues of air quality are to be addressed.

The relative importance of NO<sub>x</sub> and VOC in ozone formation and control varies with local- and time-specific factors, including the relative amounts of VOC and NO<sub>x</sub> present. In rural areas with high concentrations of VOC from biogenic sources, ozone formation and control is governed by NO<sub>x</sub>. In some urban core situations, NO<sub>x</sub> concentrations can be high enough relative to VOC to suppress ozone formation locally, but still contribute to increased ozone downwind from the city. In such situations, VOC reductions are most effective at reducing ozone within the urban environment and immediately downwind.

The formation of ozone increases with temperature and sunlight, which is one reason ozone levels are higher during the summer. Increased temperature increases emissions of volatile manmade and biogenic organics and can indirectly increase NO<sub>x</sub> as well (e.g., increased electricity generation for air conditioning). Summertime conditions also bring increased episodes of large scale stagnation, which promote the build-up of direct emissions and pollutants formed through atmospheric reactions over large regions.

The most recent authoritative assessments of ozone control approaches have concluded that, for reducing regional scale ozone transport, a NO<sub>x</sub> control strategy would be most effective, whereas VOC reductions are most effective in more dense urbanized areas.

Studies conducted in the 1970s established that ozone occurs on a regional scale (i.e., 1000s of kilometers) over much of the Eastern U.S., with elevated concentrations occurring in rural as well as metropolitan areas. While progress has been made in reducing ozone in many urban areas, the Eastern U.S. continues to experience elevated regional scale ozone episodes in the extended summer ozone season. Regional 8-hour ozone levels are highest in the Northeast and Mid-Atlantic areas with peak 2002 (3-year average of the 4th highest value for all sites in the region) ranging from 0.097 to 0.099 parts per million (ppm).

The OTAG Regional and Urban Scale Modeling and Air Quality Analysis Work Groups concluded that regional NO<sub>x</sub> emissions reductions are effective in producing ozone benefits; the more NO<sub>x</sub> reduced, the greater the benefit; and that controls for VOC are effective in reducing ozone locally and are most advantageous to urban nonattainment areas (62 FR 60320, November 7, 1997).

The EPA continues to believe based on the OTAG and NARSTO reports cited earlier, and the modeling completed as part of the analysis for the CAIR rule, that NO<sub>x</sub> emissions are chiefly responsible for regional ozone transport, and that NO<sub>x</sub> reductions will be most effective in reducing regional ozone transport. This understanding was considered an adequate basis for controlling NO<sub>x</sub> emissions for ozone transport in the NO<sub>x</sub> SIP call, and was upheld by the courts. As a result, EPA is requiring NO<sub>x</sub> reductions and not VOC reductions in the CAIR rule. However, EPA agrees, that VOCs from some upwind States do indeed have an impact in nearby downwind States, particularly over short transport distances.

The EPA expects that States will need to examine the extent to which VOC emissions affect ozone pollution levels across State lines, and identify areas where multi-state VOC strategies might assist in meeting the 8- hour standard, in planning for attainment. This does not alter the basis for the CAIR ozone requirements in this rule; EPA's modeling supports the conclusion that NO<sub>x</sub> emissions from upwind states will significantly contribute to downwind nonattainment and interfere with maintenance of the 8- hour ozone standard. The NO<sub>x</sub> SIP Call was promulgated 1998 to address interstate ozone transport problems in the Eastern U.S. EPA noted that it made sense to reevaluate whether the NO<sub>x</sub> SIP call was adequate at the same time that EPA was assessing the need for emissions reductions to address interstate PM<sub>2.5</sub> problems because of overlap in the pollutants and relevant sources, and the timetables for States to submit local attainment plans. EPA presented a new analysis of the extent of residual 8- hour ozone attainment projected to remain in 2010, and the extent and severity of interstate pollution transport contributing to downwind nonattainment in that year. The proposal notice said that based on a multi-part assessment, EPA had concluded that: "Without adoption of additional emissions controls, a substantial number of urban areas in the central and eastern regions of the U.S. will continue to have levels of 8-hour ozone that do not meet the national air quality standards."

EPA has concluded that small contributions of pollution transport to downwind nonattainment areas should be considered significant from an air quality standpoint, because these contributions could prevent or delay downwind areas from achieving the standards. EPA has concluded that interstate transport is a major contributor to the projected (8-hour ozone) nonattainment problem in the eastern U.S. in 2010. The nonattainment areas analyzed receive a transport contribution of more than 20 percent of the ambient ozone concentrations, and had a transport contribution of more than 50 percent. Typically, two or more States contribute transported pollution to a single downwind area, so that the "collective contribution" is much larger than the contribution of any single State. Also, EPA concluded that highly cost effective reductions in NO<sub>x</sub> emissions were available within the eastern region where it determined interstate transport was occurring, and that requiring those highly cost effective reductions would reduce ozone in downwind nonattainment areas. In addition, the proposal examined the effect of hypothetical across-the board emissions reductions in nonattainment areas. The notice stated that EPA had conducted a preliminary scoping analysis in which hypothetical total NO<sub>x</sub> and VOC emissions reductions of 25 percent were applied in all projected nonattainment areas east of the continental divide in 2010, yet approximately 8 areas were projected to have ozone levels exceeding the 8-hour standard. Based on experience with state plans for meeting the one-hour ozone standard, EPA said this scenario was an indication that attaining the 8- hour standard will entail substantial cost in a number of nonattainment areas, and that further regional reductions are warranted.

Virginia must submit a SIP that will achieve the SO<sub>2</sub> and NO<sub>x</sub> emission reductions required in the CAIR by September 11, 2006. States that submit an approvable SIP to satisfy the requirements of the CAIR within the required time period will satisfy the requirements in section 110(a)(2)(D).

## Legal Requirements

*Please identify the state and/or federal source of the legal requirements that necessitate promulgation of this proposed regulation, including: (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly bill and chapter numbers, if applicable, and (2) promulgating entity, i.e., the agency, board, or person. Also, describe the legal requirements and the extent to which the requirements are mandatory or discretionary.*

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#### Promulgating Entity

The promulgating entity for this regulation is the State Air Pollution Control Board.

#### Federal Requirements

On March 10, 2005 the Environmental Protection Agency (EPA) officially notified states that they had failed to submit plans, known as State Implementation Plans (SIPs), addressing the contribution to interstate transport of pollutants that form ozone and particle pollution in downwind states. The Clean Air Act (sections 110(a)(1) and (2)), requires states to submit SIPs that implement, maintain, and enforce a new or revised national ambient air quality standard (NAAQS) within 3 years of promulgation of the standard. Among other things, these SIP revisions must address a state's significant contribution of pollution in other states. In July 1997, EPA issued the 8-hour ozone and PM<sub>2.5</sub> national air quality standards. States were required to submit SIPs that satisfied certain initial Clean Air Act requirements for implementing these standards by July 2000. This submittal initiates requirements to address interstate transport of air pollutants under section 110(a)(2)(D). Section 110(a)(2)(D) of the Clean Air Act provides an important tool for addressing the problem of interstate transport of air pollutants. This provision applies to each pollutant covered by a NAAQS and to all areas of the country regardless of their attainment designation. This section of the Act specifically provides that a SIP must prohibit statewide air pollutant emissions that significantly contribute to a nonattainment or maintenance problem in another state. EPA has made a finding that Virginia has failed to make the required submission addressing interstate transport. The finding starts a 2 year clock for EPA to issue a final Federal Implementation Plan (FIP) that will address the requirements of section 110(a)(2)(D) if Virginia fail to make the required submission. This action is also the first action required under a consent decree between EPA and Earth-Justice. In March 2004, Earth-Justice filed a notice of intent to sue EPA over EPA's failure to find that states had not submitted section 110(a)(1) SIPs for PM<sub>2.5</sub> and ozone. The March 10 promulgation satisfies EPA's obligation under the consent decree concerning the section 110(a)(2)(D) requirements related interstate transport.

On July 17, 1997, following a lengthy scientific review process, EPA revised the NAAQS for ground-level ozone and particle pollution or particulate matter. Specifically, EPA replaced the 1-hour ozone standard by promulgating a new 8-hour ozone standard to protect against longer exposure periods. EPA also promulgated new particulate matter standards and established both an annual and a 24-hour standard for fine particles - those 2.5 micrometers in diameter or smaller. Fine particles are about 1/30th the diameter of a human hair. Ozone is rarely emitted directly into the air. Ozone is generally formed when oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOCs) react in the presence of intense sunlight. NO<sub>x</sub> and VOCs are emitted by sources of combustion including motor vehicles, and industrial facilities, also, gasoline vapors, chemical solvents and natural sources. Fine particle pollution, or PM<sub>2.5</sub>, is a mixture of microscopic solids and liquid droplets suspended in the air. Fine particles may be emitted directly or formed when other air pollutants – including sulfur dioxide (SO<sub>2</sub>) and NO<sub>x</sub> emitted by cars, power plants and other industrial sources react in the atmosphere. In a separate, but related regulatory action, on March 10, 2005 EPA promulgated the Clean Air Interstate Rule (CAIR). Based on the Clean Air Act requirements for states to address the interstate transport of air pollutants, this rule finds that 28 states, including the District of Columbia, contribute significantly to nonattainment, or interfere with maintenance, of the NAAQS for 8-hour ozone and PM<sub>2.5</sub> pollution in downwind states. The 28 states identified in the CAIR must submit SIPs that will achieve the emission reduction requirements in the CAIR by September 11, 2006. States that submit an approvable SIP to satisfy the requirements of the CAIR will satisfy the requirements in the EPA's findings notice (70 FR 25162, May 12, 2005) related to section 110(a)(2)(D).

### State Requirements

Section 10.1-1322.3 of the Code of Virginia indicates that the board may promulgate regulations to provide for an emissions trading program to achieve and maintain the NAAQS. The banking and trading program shall result in net air emission reductions, create economic incentive for reducing air emissions and allow for economic growth. In developing the regulations, the board shall consider (i) the definition and use of emissions reduction credits from mobile and stationary sources, (ii) offsets, (iii) interstate or regional trading, (iv) mechanisms needed to facilitate trading and banking, and (v) emissions allocations. However, no regulation shall prohibit the direct trading of credits or allowances between private industries provided such trades do not adversely impact air quality in Virginia. The regulations applicable to the electric power industry shall foster competition in the electric power industry, encourage construction of clean, new generating facilities, provide without charge new source set-asides of five percent for the first five plan years and two percent per year thereafter, and provide an initial allocation period of five years.

## Substance

*Please detail any changes that will be proposed. For new regulations, include a summary of the proposed regulatory action. Where provisions of an existing regulation are being amended, explain how the existing regulation will be changed.*

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The Department is considering a number of alternatives (see below) with regard to this regulatory action. Several would involve the promulgation of regulations patterned after the EPA model emission trading rules or some variation thereof. If the Department selects the emissions trading approach to meet the EPA requirements, it would necessitate the addition of three trading rules covering the following programs: NO<sub>x</sub> annual program, NO<sub>x</sub> ozone seasonal and SO<sub>2</sub> annual program. These programs are similar in concept and structure to the NO<sub>x</sub> SIP call emissions trading program now found in 9 VAC 5 Chapter 140. If the Department selects other alternatives, it is not possible to specifically identify the resulting regulation at this time.

## Alternatives

*Please describe all viable alternatives to the proposed regulatory action that have been or will be considered to meet the essential purpose of the action. Also, describe the process by which the agency has considered or will consider, other alternatives for achieving the need in the most cost-effective manner.*

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Alternatives (one or more or a combination thereof) to meet the purpose of this regulatory action are being considered by the Department. Alternatives are mainly being considered for the NO<sub>x</sub> control program because EPA offers less flexibility for the SO<sub>2</sub> control program and NO<sub>x</sub> is a precursor to the formation of ozone which remains an air quality problem for Virginia. The alternatives being considered by the Department are discussed below. The degree to which the resultant regulation would (i) be approvable by EPA and enable Virginia to participate in the trading program, (ii) affect the costs to the regulated entities, and (iii) impact the environment will vary depending on the alternative selected.

1. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and include all elements of the EPA model trading rule.

2. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and include all elements of the EPA model trading rule. In addition, develop a regulatory

mechanism (source-specific permits with emission caps or emission rate limits) that would regulate EGUs to the extent necessary to keep associated emissions within Virginia's budget.

3. Develop a regulatory program that would regulate EGUs to the extent necessary to keep associated emissions within Virginia's budget and would not include any elements of the EPA model trading rule.
4. Develop a regulatory program that would regulate non-EGUs (any source that is not an EGU) to the extent necessary to achieve the necessary reductions as would be required from EGUs to keep associated emissions within Virginia's budget and would not include any elements of the EPA model trading rule.
5. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and non-EGUs covered by the NOx SIP Call, and include all elements of the EPA model trading rule.
6. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and include all elements of the EPA model trading rule, except that the Commonwealth would withhold the allowances for the compliance supplement pool.
7. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and include all elements of the EPA model trading rule, except include provisions to allow the Commonwealth to retire or hold allowances for environmental benefit or use by renewable energy sources.
8. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and include all elements of the EPA model trading rule, except include provisions to allow the Commonwealth to auction the allowances.
9. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and include all elements of the EPA model trading rule, except that the compliance dates would be more restrictive.
10. Develop a regulatory program that would meet the requirements of the EPA CAIR and would regulate EGUs and include all elements of the EPA model trading rule. In addition, develop a regulatory mechanism that would regulate non-EGUs to the extent necessary to keep associated emissions at a level necessary to meet Virginia's environmental needs.
11. Take no action to develop a plan that would meet the requirements of the EPA CAIR.

## Public Participation

*Please indicate the agency is seeking comments on the intended regulatory action, to include ideas to assist the agency in the development of the proposal and the costs and benefits of the alternatives stated in this notice or other alternatives. Also indicate whether a public meeting is to be held to receive comments on this notice. Indicate that: (1) the agency is not holding a public meeting because the agency has authorized proceeding without holding a meeting or (2) the agency is holding a meeting. If a public meeting is to be held, indicate that the date, time and place of the meeting may be found in the calendar of events section of the Virginia Register of Regulations.*

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The Department is soliciting comments on (i) the intended regulatory action, to include ideas to assist the Department in the development of the proposal, (ii) the impacts of the proposed regulation on farm and

forest land preservation, and (iii) the costs and benefits of the alternatives stated in this notice or other alternatives. All comments must be received by the Department by 5:00 p.m. on August 10, 2005 in order to be considered. It is preferred that all comments be provided in writing to the Department, along with any supporting documents or exhibits; however, oral comments will be accepted at the meeting. Comments may be submitted by mail, facsimile transmission, e-mail, or by personal appearance at the meeting, but must be submitted to Mary E. Major, Environmental Program Manager, Office of Air Regulatory Development, Department of Environmental Quality, P.O. Box 10009, Richmond, Virginia, 23240 (e-mail: memajor@deq.virginia.gov) (fax number: 804-698-4510). Comments by facsimile transmission will be accepted only if followed by receipt of the signed original within one week. Comments by e-mail will be accepted only if the name, address and phone number of the commenter are included. All testimony, exhibits and documents received are a matter of public record. Only comments (i) related to the information specified in this notice and (ii) provided in accordance with the procedures specified in this notice will be given consideration in the development of the proposed regulation amendments.

A public meeting will be held by the Department to receive comments on and to discuss the intended action. Information on the date, time, and place of the meeting is published in the Calendar of Events section of the Virginia Register. Unlike a public hearing, which is intended only to receive testimony, this meeting is being held to discuss and exchange ideas and information relative to regulation development.

### Participatory Approach

*Please indicate the extent to which an ad hoc advisory group will be used in the development of the proposed regulation. Indicate that: (1) the agency is not using the participatory approach in the development of the proposal because the agency has authorized proceeding without using the participatory approach; (2) the agency is using the participatory approach in the development of the proposal; or (3) the agency is inviting comment on whether to use the participatory approach to assist the agency in the development of a proposal.*

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Subject to the stipulations noted below, the Department will form an ad hoc advisory group to assist in the development of the regulation. If you want to be on the group, notify the agency contact in writing by 5:00 p.m. on July 22, 2005 and provide your name, address, phone number and the organization you represent (if any). Notification of the composition of the ad hoc advisory group will be sent to all applicants. If you want to be on the group, you are encouraged to attend the public meeting mentioned above. The primary function of the group is to develop recommended regulation amendments for Department consideration through the collaborative approach of regulatory negotiation and consensus. At its discretion, the Department may dispense with the use of an ad hoc advisory group if it receives less than five applications. Multi-applications from a single company, organization, group or other entity count as one for purposes of making the decision specified in the preceding sentence.

### Impact on Family

*Please provided an assessment of the potential impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: (1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; (2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; (3) strengthen or erode the marital commitment; and (4) increase or decrease disposable family income.*

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It is not anticipated that these regulation amendments will have a direct impact on families. However, there will be positive indirect impacts in that the regulation amendments will ensure that the Commonwealth's air pollution control regulations will function as effectively as possible, thus contributing to reductions in related health and welfare problems.

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